

U.S. Patent Application Serial No. 09/361,610
Amendment dated May 17, 2004
Reply to OA of February 17, 2004

REMARKS

Claims 19-23 and 25-29 are currently being examined, of which claims 19, 21, 22, and 25-28 have been amended. Claims 18 and 24 have been canceled without prejudice or disclaimer of their subject matter. No new claims have been added. It is respectfully believed that no new matter has been added.

Allowable Subject Matter:

The Examiner has objected to claims 22, 23, 28, and 29 as being dependent upon a rejected base claim, and has noted that those four claims would be allowable if rewritten in independent form with features of the base claims and any intervening claims.

Claims 22 and 28 have been rewritten in independent form, including features of base claims and any intervening claims.

Thus, Applicants respectfully submit that the objection to claims 22, 23, 28, and 29 should be withdrawn.

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35 USC 102(b):

Claims 18 and 24 have been rejected under 35 USC 102(b) as anticipated by USP
6,429,898 (**Shoda et al.**).

Applicants have canceled claims 18 and 24 without prejudice or disclaimer of their
subject matter. Thus, Applicants respectfully submit that this rejection should be withdrawn.

35 USC 103(a):

- (a) Claim 27 stands rejected under 35 USC 103(a) as obvious over **Shoda et al.**
- (b) Claims 19-21, 25, and 26 stand rejected under 35 USC 103(a) as obvious over
Shoda et al. in view of USP 5,463,421 (**Deguchi et al.**).

Applicants respectfully traverse these rejections of claims 19-21 and 25-27.

In accordance with the present invention, as set forth in independent claims **19** or **25**, as
amended, a first exposure of a first time period is carried out first, and then a second exposure of
a second time period which is shorter than the first time period is carried out. First electric
charges generated by the first exposure are read out from first light-receiving elements
intermittently present in a vertical direction to a vertical transfer register. Second electric charges

generated by the second exposure are read out from second light-receiving elements intermittently present in the vertical direction and respectively assigned to vacant transfer areas in which no electric charge is present to the vertical transfer register. The first electric charges and second electric charges are alternately arranged on the vertical transfer register. The first electric charges and the second electric charges thus read are outputted from an imager by a vertical transfer operation and a horizontal transfer operation.

Herein, the second light-receiving elements are equal to the first light-receiving elements, and the second electric charges are read-out to the vertical transfer register at the same time that a vertical transfer of the first electric charges is started or after the vertical transfer of the first electric charges is started.

Making the first light-receiving elements and the second light-receiving elements equal prevents distortion in a vertical direction from appearing on a combined image. Furthermore, reading-out the second electric charges to the vertical transfer register at the same time that the vertical transfer of the first electric charges is started or after the vertical transfer of the first electric charges is started prevents the second electric charges from colliding with the first electric charges.

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In contrast, **Shoda et al.** disclose to alternate accumulation times for the even and odd rows between a first and a second accumulation time so as to create an image having electric charges according to different accumulation times. However, **Shoda et al.** fail to disclose or remotely suggest anything about performing twice exposure on the same row and reading out electric charges based on a second exposure to a vertical transfer register at the time that a vertical transfer of electric charges based on a first exposure is started or after such the vertical transfer is started.

Therefore, in view of the foregoing, **Shoda et al.** fail to describe, teach, or suggest the above-discussed features set forth in claims 19 and 25, as amended, in combination with the other claimed features.

Deguchi et al. disclose to read electric charges corresponding to one of an odd field and an even field after the electric charges corresponding to another of the odd field and the even field have been read. However, **Deguchi et al.** fail to disclose or remotely suggest anything about alternately arranging the first electric charges based on the first exposure and the second electric charges based on the second exposure on the vertical transfer register as set forth in claims 19 or 25, as amended.

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Therefore, in view of the foregoing, **Deguchi et al.** fail to describe, teach, or suggest the above-discussed features set forth in claims 19 and 25, as amended, in combination with the other claimed features.

Shoda et al. and **Deguchi et al.**, alone or in combination, fail to describe, teach, or suggest anything about performing the first exposure and the second exposure on the same light-receiving elements, and reading the second electric charges based on the second exposure to the vertical transfer register at the same time that the vertical transfer of the first electric charges based on the first exposure is started or after the vertical transfer of the first electric charges is started so as to alternately arrange the first electric charges and the second electric charges on the vertical transfer register.

Shoda et al. and **Deguchi et al.**, alone or in combination, fail to describe, teach, or suggest the above-discussed features set forth in claims 19 and 25, as amended, in combination with the other claimed features.

Thus, in view of the foregoing, Applicants respectfully submit that the rejections of claims 19-21 and 25-27 should be withdrawn.

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In view of the aforementioned remarks and amendments, it is respectfully submitted that all pending claims are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for a telephone conference to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,
HANSON & BROOKS, LLP

Darren R. Crew

Darren R. Crew
Attorney for Applicants
Reg. No. 37,806

DRC/llf
Atty. Docket No. 990864
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



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